

Stream Team Report

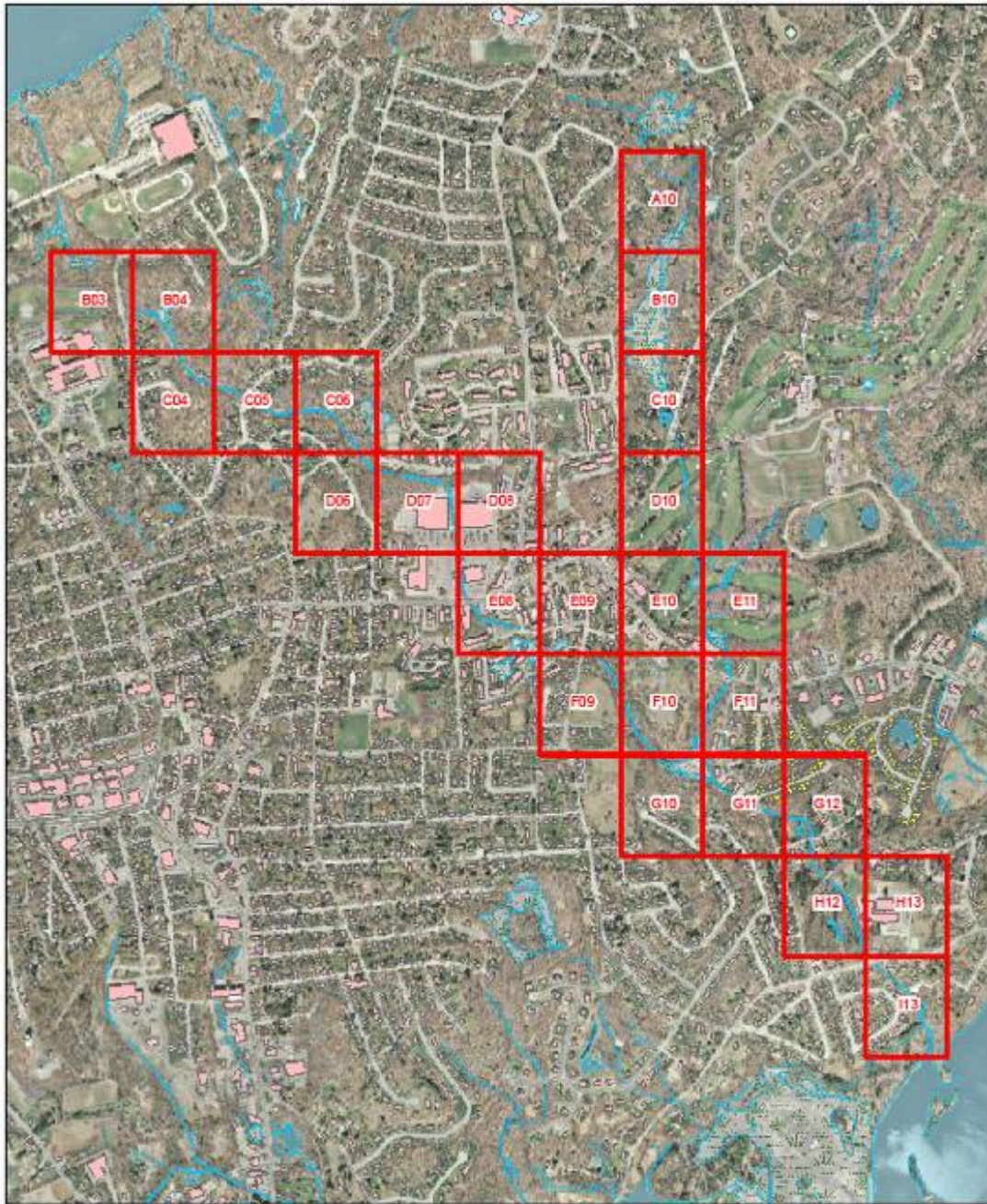


Mowry Brook Marlborough, Massachusetts Study Conducted June-July, 2007

Submitted
November 10, 2007
By Jennifer Boudrie
Jen@GreenMarlborough.org
T 508-481-0569

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Mowry Brook Survey

0 500 1,000 2,000 Feet



Introduction

The Mowry Brook Stream Study was conducted by Marlborough residents under the supervision of Priscilla Ryder, Marlborough Conservation Officer, with materials and assistance from the Massachusetts Riverways/Adopt-A-Stream Program.

This report covers Mowry Brook which has two points of origin: 1) North Mowry Brook (a north branch) which begins north of Spoonhill Avenue and flows south to Route 20, and 2) Mowry Brook (a northeast branch) which begins by Stevens Street and flows southeast to the Price Chopper plaza. The two branches join near Phelps Street and their confluence empties into Sudbury Reservoir near Farm Road.

Information for this report was provided by Jennifer Boudrie, Mike Manning, and Peggy Clark and their respective stream teams as noted in the following pages.

Getting Started: Training Residents as Volunteers

Training included an interactive slide show, maps, and stream survey data collection sheets for seven residents. Training was conducted by Rachel Calabro, DFWELE, and Priscilla Ryder, Marlborough Conservation Officer. At this meeting, the stream survey was divided into four sections and was to be done within three weeks.

Notifying Abutters

The conservation officer, Priscilla Ryder, mailed letters to notify residents and businesses abutting the stream and inviting them to participate. Although none participated in the walk, eleven chose to email, call, and speak with volunteers to provide information about the stream. Each was pleased to learn about the stream study and some volunteered for future stream studies.

Publicity

There was no advance media publicity but two newspaper articles and the local access TV station reported positively on the event afterwards.

Mapping/GPS/Photos Detailed stream survey maps were provided to stream team members. A GPS was not available at the time. Photos were taken and included in the report.

Survey Kits

Each team was provided with:

- Stream section maps
- A copy of letter to abutters
- Shoreline Survey Field Data Sheets
- Orange Vests from the DPW

Field Work

Four groups surveyed the stream in three weeks using data sheets.

Follow Up Meeting

The Stream Team reconvened in a follow up meeting to report problems (debris/trash, beaver dams, culverts too small for flow, inaccessible stream bed for walking due to vegetation and mud), resources (habitat, wetlands, walking trails) and priorities (two too-small culverts, beaver dams, fence/trash).

Action

The conservation officer sent an email about priorities (two too-small culverts, fence/trash) to the DPW department.

Implementation

Unknown.

North Mowry Brook (north section)

Map Segments: A10, B10, C10 and the area north of A10
Date: June 2, 2007
Observers: Jen and Rick Boudrie
Weather: Sunny, warm, 75 Fahrenheit
Recent weather: Mild, light rain

Stream Description

Stream bottom: organic debris, silt, mud, sand, some rocks.
Water: tea-colored, less than 1 inch deep. This is the first stream study so the normal water level is unknown, but judging from the stream banks the water level was low
Flow: slight
Gradient: low
Sinuosity: straight
Reach: slow flow, no blockage (note: two beaver dams are breached)

Habitat

Large and small woody material, small organic materials, no undercut banks, sparse overhanging vegetation, abundant reeds in wetland area by beaver dam. No algae seen.

Human Alterations

Some oily areas behind the parking lot area of the apartment complex on Hosmer Street.
Some foam and scum in the same area.
There is some run off and trash from the parking lots.

Riparian Area and Land Use

The banks are intact. The area is largely wetlands/marsh with shrubs, grasses, forested/trees that are 200-1000 feet on left and right banks.
Visible land uses are residential areas (houses and apartments), wetlands, and wooded areas and one road (Spoonhill Avenue).

Recreation

None

Wildlife

No fish
One large frog
One beaver
Deer tracks
Small animal tracks
Lots of chirping birds
One mallard duck

Wildlife Habitat

Standing dead trees, fallen limbs, scattered rocks and boulders, springs and seeps.

Narrative

At the northernmost tip of North Mowry Brook there is a spring and a beaver pond. We saw a beaver running along the pond by the beaver dam. The area is very overgrown with trees and bushes and is very marshy. We spoke with the landowner. He has lived there 60 years. The stream used to be a babbling brook with crayfish. It is now a muddy, marshy area with no crayfish.



Crossing Spoonhill Avenue, the area broadens into a wetland and forested area.

On one side is a very large apartment complex that abuts the wetland. The stream bank has some plastic and metal debris mixed in with the plants and bushes. Brown polluted water is visible. Near the apartment complex are houses. Behind two houses were large leaf piles from home owners.



Further downstream there is 12-foot-high vegetation (reeds). The stream was too muddy/mucky to walk in so we walked the bank instead. We could not see the stream for several hundred yards. When we could see it, the water flowed slowly.



The wetlands end near Stow Road and the stream enters a developed area with houses. Behind the house at 58 Stow Road is a beaver dam. It was breached so the water could flow through it but there is still lots of debris.



Near Stow Road the stream flows through a driveway culvert. Debris collects there and is slowly eroding the driveway. The culvert is too small during floods.



From here the stream flows into a pond with a dilapidated bridge here. The stream continues beyond the pond and passes a few more houses. It goes under Stow Road, over rip rap, and under Concord Road to the golf course. The culvert at Concord Road is too high for upstream aquatic/wildlife migration.

PROBLEMS

1

Behind the apartment complex (the apartment numbers # 48 and #49 were visible) there is a 2-foot storm drain disconnected from the concrete wall. One hundred feet from the wall and near the stream is a brown, rainbow glossy oily discharge from the direction of the concrete wall.

2

Two longtime neighbors expressed concerns about debris (tires, water heater, shopping carts, etc), beaver damage, reduced aquatic life, and stream changes over the years.

3

Eroding culvert under the driveway on Stow Road.

4

Blockage from beaver dam debris, and a broken wooden bridge could potentially block the stream.

5

The Concord Road culvert is placed too high for aquatic/wildlife migration.

6

Beaver dams change the nature of the stream, more mosquitoes, debris issues.

ASSETS

Two longtime landowners we spoke with enjoy living on the stream. They like the stream, flora, and fauna. Overall it is a lovely wetland area.

PRIORITIES

Monitor beaver activity north of Spoonhill Avenue.

Maybe clean up the beaver debris by Stow Road. The owner of 58 Stow Road wants more of the beaver dam debris removed because trash from the apartments collects there.

The culvert under the driveway is too small. It is eroding and partly blocked by beaver debris that washes downstream.

The broken wooden bridge by Stow Road could be a hazard or blockage at some point.

North Mowry Brook (south section)

Narrative Description of the survey: Mowry Brook, Marlborough, MA.

Submitted by: Mike Manning (508) 624-4878

The survey included the following map grid sections: D10, E10, and F10. Grid sections D10 and E10 are within the bounds are the Marlborough Country Club property.

Survey completed: 07/05/07.

Grid section D10: The survey started at the northern section of grid section D10. At this section, Mowry Brook flows under Concord Road through a series of culverts under the roadway. Since the grade is fairly steep, the brook flows fast. In addition to the grade, heavy rain showers from the previous evening also contributed to the flow. Another factor is that this section of the stream is very linear – with no significant curves or turns. The bottom of the brook is composed mainly of cobblestones – most in the 2” to 10” diameter range. The color of the water is typically clear to a tea color. The depth of the brook is less than 12” deep. In this grid section, the brook flows under five (5) bridges and one (1) bridge/dam combination. The entire brook, in this grid section, is fairly clean and free of debris.

Survey completed: 07/05/07.

Grid section E10: The survey started at the northern section of grid section E10. At this section, the grade is substantially less than D10’s grade and therefore the flow is significantly slower. The color of the stream also changes from the tea color to a milky color. The brook flows under two (2) bridges. In the middle of this section, there are two (2) ninety degree turns in the brook. There is also significant vegetation overhanging the banks of the brook. The bottom of the brook is mainly sandy and silty. The section ends at the rear of buildings abutting the westbound side of Route 20.

Survey completed: 07/05/07.

Grid section F10: The survey started at the northern section of grid section F10. At this section, the brook only appears in the southeast and southwest corners of the grid section. The southeastern section is composed mainly of wetlands. It was virtually impossible to track the brook through this particular section of the grid. The southwestern section is heavily forested and hundreds of yards from the nearest roadway.

Mowry Brook (northeast branch)

Map Segments: B03, B04, C04, C05, C06, D06, D07, D08, E08
Date: June 10, 2007
Observers: Jen Boudrie, Jessica Ritter, and family (names not remembered)
Weather: Sunny, warm, 75 Fahrenheit
Recent weather: Sunny

Stream Description

Stream bottom: organic debris, silt, mud, sand, some rocks.
Water: tea-colored, 1-3 inches deep. This is the first stream study so the normal water level is unknown, but judging from the stream banks the water level was low
Flow: slight
Gradient: low
Sinuosity: straight, some curves
Reach: slow flow, no blockage

Habitat

Large and small woody material, small organic materials, no undercut banks, sparse overhanging vegetation. No algae seen.

Human Alterations

Some oily areas in stream by road.
There is some run off and trash from the parking lots.

Riparian Area and Land Use

The banks are intact. The area is largely developed with housing and businesses. Plants and open space are about 10-200 feet on left and right banks along most of the stream. Visible land uses are residential areas (houses and apartments), a shopping center (the Price Chopper plaza), and roadways (residential streets and Route 20).

Recreation

None

Wildlife

None

Wildlife Habitat

Standing dead trees, fallen limbs, scattered rocks and boulders, springs and seeps.

Narrative

At the northeastern most tip of Mowry Brook there is a spring that emanates from a rocky embankment bank on top of which is a roadway which is Stevens Street by the school. The water trickles over these rocks and descends to a flat, sandy/muddy streambed. On one side of the stream bed is a marshy area, and the other side is a woodsy area with a paved walking path and an unobtrusive sewer line that parallels the stream for some distance.



There is some oily residue at the stream's edge as shown in this photo. The photo was taken a few yards from the embankment and the road where the spring originates. The oil residue is probably run off from the roadway.



Party trash was found in the woods near Mowry Brook and Kings Grant Road. It is behind a couple of homes on the street.



Near the party trash area is this culvert on Kings Grant Road which has some natural debris that may clog the culvert at some point.



Between Kings Grant Road and the Price Chopper parking lot, the stream is difficult to access because of a chain link fence. We walked on the street and could not see the stream in this section. We picked up the stream again at the Price Chopper Plaza.

A shopping cart was found in the stream by Price Chopper. Other debris from the plaza probably washes downstream.



This grated culvert is behind Gotham Ink and the large apartment complex. It catches debris that is washed downstream. At this point the stream disappears underground for some distance and reappears by Phelps Road.

The overflow pipe in the right of the photo runs under a large parking lot in the apartment complex and dumps into a large marshy conservation land area on the other side of the parking lot.



Trash from the Price Chopper plaza gets washed downstream to this grated culvert.

A former employee of the apartment complex cited occasions when the stream rose above the culvert and flooded the parking lot. It is possible that since the year this culvert was installed, development and runoff has increased and this culvert is no longer adequate to handle the runoff.

PROBLEMS

These problems are noted in the narrative/photos above.

1

An oily residue from Stevens Road seeps into the stream.

2

Debris is found at Mowry Brook near Kings Grant Road. There are sticks in the stream that may block the culvert and party trash is nearby in the woods.

3

There is a shopping cart in the stream by Price Chopper.

4

Behind Gotham Ink and Route 20 there is an apartment parking lot and Mowry Brook flows underground into a grated culvert there. **Trash** from the Price Chopper plaza gets washed downstream to this grated culvert. **Flooding** of the parking lot occurs during heavy rain/snowmelt runoff because this culvert is too small to handle the runoff. The **overflow pipe** dumps into a large marshy conservation land area on the other side of the parking lot.

ASSETS

The paved pathway between Stevens Street and Kings Grant Road provides access to the school and surrounding neighborhoods. It makes for a lovely walk in the woods near the stream. Although it parallels a sewer system that system is not obtrusive.

PRIORITIES

Provide a barrier between the roadway and the stream at Stevens Road.

Clean up debris by Kings Grant Road and Price Chopper.

Evaluate the culvert and overflow in the apartment parking lot behind Gotham Ink and Route 20.

Mowry Brook (the confluence between Phelps and Sudbury Reservoir)

NARRATIVE FINDINGS (MOWRY Brook) (Ginger & Peg's Report begins) F11 – H13

Section 1 Survey write up (F11) –Begins (right side Phelps Street across from Trailer Park)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine)

We approached the segment of this stream from this point, since access between Route 20 and down Phelps to this spot was inaccessible due to extremely dense vegetation. The left bank at this point (only) was made up of a precipitous boulder structure; at the top of it was an abutter's garden but it had wooden rails that seemed to prevent run off down into stream. Right side was a sloped wooded area. A lawn abutted it about 10 yards back. Some but, not much litter. One small riffle; otherwise water moved on down easily over the rocks to the well exposed culvert.



(Photo taken August 18, 2007) notice top right neighbor's garden area

Section 2 Survey Write up: (G11-G12) Next to Trailer Park entrance Phelps Street
Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

This area on the east side of Phelps Street was much different from stream above on west side. Here floor cover was made up of much smaller stones; water, pouring in from culvert was tea colored and deep in this area. Left side of river was wet, heavily vegetated area leading up slope to mobile homes. Right side, also heavy vegetation – no sign of nearby home park, etc.

- Large tree on right side had very exposed roots, tree just below retaining wall
- On right side of retaining wall, a corrugated metal pipe was exposed, though nothing was coming out of it.
- Right side – lot of run off from street
- Hanging wire from the above mentioned tree with vines growing on it.
- Some trash.

Lots of beer cans, etc. down very steep slope...hard to reach area...also large blue plastic pool noted on 8/18/2007



(Photo August 18, 2007) looking down steep wall Phelps Street

Section 3 Survey Write up (G12) Royce Road (North side)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine

The stream had meandered through thick low vegetation – lots of marshy areas visible. Lots of “skunk cabbage”. Sounds of many birds. Culvert in good shape except for 3-4 branches lying across the front of it. Sights of deer (?) footprints.

- No trash
-



Photo taken August 18, 2007 (large stick in front of culvert) Royce Road



Photo taken August 18, 2007 Royce Road

DEP 212-717: Sign on Royce Road mostly covered by recent growth.

Section 4 Survey Write up (G12) Royce Road (South side)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine

River flows slowly through here. Left bank is sloped from an abutting lawn. Right side goes into wet areas. The left side of the retaining wall shows a high amount of erosion and probably allowing lots of run off from the street. Water is cold. Very small amount of trash.



(Photo taken August 18, 2007) Royce Road

Section 5 Survey Write up (H12-H13) Near Kane School Farm Road (north side)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine

The stream, just before it crossed under Farm Road was surrounded by dense vegetation. Signs of plants probably planted by neighbors. Area back upstream becomes very wooded. Went into Kane School yard to see if could see the stream further up. We were able to see a stream, muddy, flowing through a very heavily shrubbed and wooded area – rear ball field at Kane. There was a sign of run off into wooded area (man made gravel “ditch”). Many vines in this area too. This water seemed to come from two culverts side by side on the hilly area NW side of the school. Water ran smoothly and clearly through culverts. Not sure if this is “our” stream further up but rather maybe a branch from more easterly down Route 20.



(Photo taken August 18, 2007) Farm Road

Farm Road North Side

Section 6 Survey Write up (H12-H13) Near Kane School Farm Road (south side)

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine)

South side of Route 20, the early part of the stream bottom appeared to be concrete. Lots of moss/algae like vegetation in this fairly shallow area. Lawns to left side; right side more low foliage. Stream continued down into more wooded area.

Inside the culvert was another pipe coming in perpendicularly; about 2 feet up above floor of culvert. Culvert in good condition.



(Photo taken August 18, 2007) Farm Road

Farm Road South Side

Section 7 Survey Write up (I13) South side of Farm Road into Sudbury Reservoir

Surveyors: Ginger Ryan, Peg Clark, Laurie Grainger

Description: Saturday, June 2, 2007

Weather: hot, humid (over past 24-48 hours – hot, humid, thunder showers; high pollen esp. pine

This segment flows (slowly) into Sudbury Reservoir. Water heavily coated with pine pollen
(lots of wind/rain day before)

“Mucky” bottom

Lots of water vegetation

This is the segment just opposite Linda Circle – close to Trombettas.

Following the path in the woods, we were able to circle Country Lane and then get close to back of Farmington Circle, where the original stream we were following, now entered the Reservoir. Very slow moving; but no odor; lots of water vegetation, especially reeds near end of stream and beginning of reservoir. Pathway had debris in a couple of areas.

(No photo)

Resident/Abutter Notes

Calls, Emails, and in-person conversations with residents and abutters

Notes by Jen Boudrie

Telephone Conversations

1

May 31, 2007

C. Carlman, 58 Stow Road is selling her house after 30 years. Loved the wildlife and nature life there. But some debris from the beaver dam is clogging up the waterway. Litter comes downstream, too. An old wooden bridge has fallen in the brook nearby. I promised to take a close look at everything she mentioned, take photos and pass the info on. Overall, I got the impression she would like the city to attend to the stream more in that area. Sounds like a problem area to be looked at. She spoke about the wildlife there... crawfish in the old days...but no more. Ducks, herons, minks, and river otters still come around.

2

June 1, 2007

E. Ritter, 22 Stow Road said the water table is high in winter and spring and her front yard is wet. It has been that way since she moved there 9 years ago. She has spoken to the city about it. Apparently a "French" drain was installed/uninstalled.... (Sounds to me like the property is partly on a wetland.) I said I would be sure to look at it.

3

June 1, 2007

J. Benway, 99 Beech Street got the letter but doesn't live on Mowry Brook. (I think he said there's a stream nearby.) He said vines are killing trees and he has spoken to the city about that. He says maybe the city should get involved.

4

June 1, 2007

G. Crossman, 91 Neil Street, got the letter but doesn't live on Mowry Brook. He lives on Harriman (?) brook. A pipe about 5' in diameter flows under Marlborough and ends up behind his house. When it rains, lots of debris washes into the stream and collects there. He suggested a net at the mouth of the stream/reservoir to catch debris. He would volunteer to check it monthly. Also concerned about the city DPW dumping snow in the stream there as it relates to water quality and safety.

5

June 4, 2007

R. LaBrache (458 Farm Road) has lived along Mowry Brook her whole life in one house or another. Her family bought the now 200 year old farm house from Phillip or Fred Mowry whose family had owned the land around the brook many years ago. They were very influential farmers. She is very concerned about the changes that have happened over the years. There used to be turtles that came to lay their eggs near the stream, polliwogs, minnows, herons and

crayfish. It used to be a vibrant stream. Now those things are gone. The peepers, sadly, disappeared 35 years ago. Now the frogs are gone or deformed. She has 7 acres that she wants protected. She thinks that a pamphlet to abutters should explain what the brook needs to live. Good idea! She said people are dumping all sorts of things into the stream, including grass clippings which may have chemicals on them. She is very glad about our interest in conservation and preservation efforts. She wants to know if there was anything she could do to help. She said behind Kane School the fence is broken and kids sometimes party and make a mess. She cleans it up but she is getting on in years and would like someone to take care of that.)

6

June 5, 2007

Jay from Maintenance at Royal Crest said they got the letter and he was calling to follow up. I asked if he had any concerns and he said no.

7

B. Olson has been manager of Gotham Ink for 20 years and called to say he wanted to do stream walks. I asked if he had any concerns. He said no. He just wanted to volunteer to go on walks.

Visits with Residents on the day of the Stream Walk

8

June 2, 2007

C. Carlman (see above) was waiting for us and reiterated in person what she had already said by telephone. She expressed concern about the broken wooden bridge and the debris. She has sold the home to people who appreciate wildlife and she was happy about that.

9

June 2, 2007

The Ercolanies at Spoonhill Avenue were in their yard when we walked by. They did not receive the letter. We introduced ourselves and gave them a copy. He has lived there 60 years and owns the land around the stream from Spoonhill Ave to Grace Circle. About 9 months ago they discovered a beaver had built a dam in the stream north of his home. He contacted the conservation office and the state officials who came. They are concerned about future changes to the wetland area and their homes. They noted that the stream has changed over the years. It used to be a babbling brook with crayfish. It has become a bit muddy/swampy with much lower/slower stream flow and mosquitoes.

Emails from Resident of Mowry Brook

10

June 5, 2007

My name is P. Hansen and I live at 54 Stow Road. Mowry Brook runs through my back yard. I understand from my neighbor that you were here on Saturday, but I missed you.

I'm interested, as you might expect, in preserving and improving the brook. I've lived here since 1989, and over these years, the flow of the brook seems to have increased substantially, especially with the development of the houses up on Roberts Road. There has been serious erosion of the bank where the brook turns southward in the yard. It's width has probably doubled in the last 10-12 years. The culvert under my neighbor's driveway at #40 is inadequate to handle this increased flow, causing my backyard to flood during heavy rains. The beavers in the swamp during the years of 2004 and 2005 did not help matters. The city has since removed the dam, which has helped. The dam frequently breached during heavy rains.

I'd be happy to supply any information I can. Feel free to call me if there are any questions you think I might be able to answer. P. Hansen

11

A. Shown at 154 Helen Dr. would like to volunteer for the Stream Study.

NOTE: Phone numbers and emails were removed to provide privacy. For information contact Jennifer Boudrie at 508-481-0569 or Jen@GreenMarlborough.org.

Additional Photos (June 2007)



North Mowry Brook Source
North of Spoonhill Road
June 2, 2007 - A Sunny Day



North Mowry Brook Source
North of Spoonhill Road
June 18, 2007 - A Rainy Day



Beaver Dam North of Spoonhill Road



Beaver Pond North of Spoonhill Road



Brook just south of Spoonhill Road



Cinnamon Ferns



Damaged drainage behind apartments on Hosmer Street





Twelve foot high plants by Stow Road



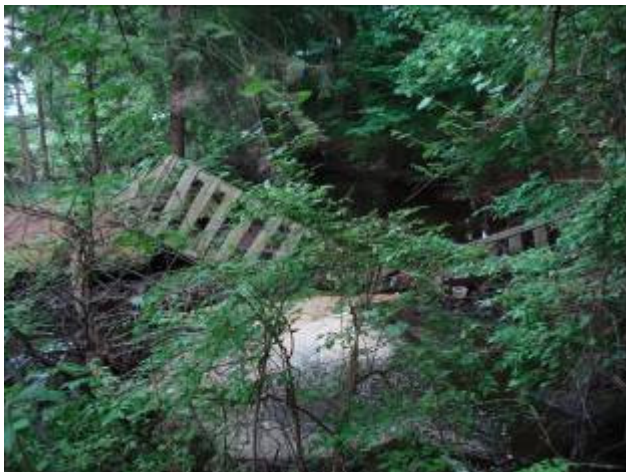
Beaver Dam by Stow Road



North Mowry Brook near Stow Road



Debris by Stow Road



Broken wooden bridge by Stow Road



Damaged culvert under driveway bridge by Stow R.



Stream Team by culvert south of Concord Road



Riprap between Stow and Concord Roads



Stream Team south of Stevens Road by school near stream source



Mowry Brook south of Route 20 behind Gotham Ink